



Tarago rail yards lead contamination

Information pack
April 2020

What has been happening?

- We have brought on additional experts to ensure extensive testing is carried out and data analysed to progress a management plan
- Timber sleepers have been removed from site
- A trial application of a soil stabiliser has been applied in the rail corridor to suppress dust and reduce run off
- Questions raised at the March community meeting have been answered and are available on our web page and in this information pack
- Property owners who self nominated for testing have been contacted and all testing carried out
- Residents who self nominated for blood testing have been contacted to progress testing with their local GP
- The NSW Environment Protection Authority (EPA) has issued a Declaration listing the Tarago rail siding land as significantly contaminated. We are working closely with the EPA to ensure contamination is investigated and managed

Summary of testing

- In excess of 500 samples have been taken – including soil, dust, paint, water (groundwater, tank water and runoff)
- Results from X-Ray fluorescence (XRF) spectrometry testing are generally low and acceptable with four exceptions:
 - In localised spots along the route from the mine to the rail corridor
 - Around an old workshop on Mulwaree Street
 - South of the station masters cottage within the rail corridor
 - On an overland flow path from the rail corridor across Boyd Street

(for more information on XRF testing visit www.epa.gov/sites/production/files/2015-12/documents/6200.pdf)

- We are currently analysing results and data from all sampling as it is received and will keep the community informed

Testing March 2020

Inside the rail corridor

Testing

- Over 150 soil samples submitted for laboratory analysis
- Over 30 X-Ray fluorescence spectrometry (XRF) testing
- Surface water monitoring upstream and downstream of three rail culverts on three occasions
- Groundwater sampling from five wells

Results

- High lead in the rail formation and adjacent soil along about 900 metres
- High metals in surface water discharging from site – exceeds several relevant thresholds
- High lead appears limited to the upper metre of soil

Testing March 2020

The Ore Concentrate Load Out Complex

Testing has been completed to address uncertainty around demolition and clean up of the former load out complex.

Testing

- 20 test pits to > 1 metre depth
- Collection of over 60 soil samples for laboratory analysis

Results

- Inspection of test pit spoil indicates some remnant impacts exist beneath a capping layer
- Laboratory results will be available over the next two weeks

Testing March 2020

Public areas

Testing

- Over 100 soil samples from depths of up to 4.5 metres submitted for laboratory analysis
- Over 200 XRF measurements within the Tarago township and along the route from the mine to the rail corridor
- Tank water testing including at Tarago Hall, the sports ground, the Rural Fire Service station and the showground
- Surface water monitoring at four locations downstream of the rail corridor on two occasions
- Groundwater testing at four dedicated monitoring wells including Tarago Public School

Results

- Lead in shallow soils in most areas is below relevant thresholds however there are some exceptions
- High lead (and other metals) has been observed in surface water discharging from the rail corridor
- Lead in groundwater at the school is low and acceptable

Testing March 2020

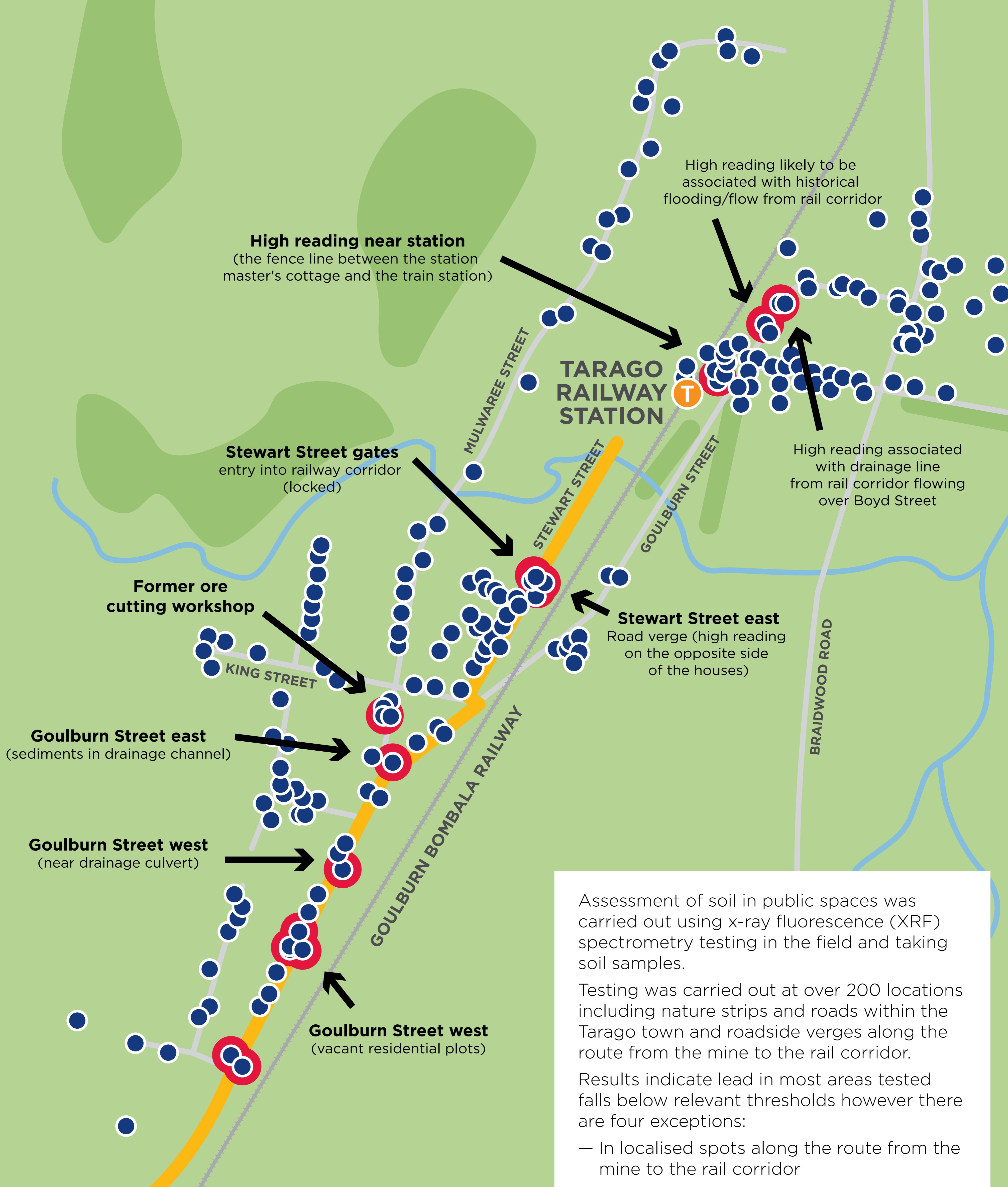
Private properties

Testing

- Over 200 soil samples
- Over 20 tank water / sediment samples
- Groundwater sampled where bores are present
- Internal dust sampling limited by Coronavirus restrictions
- Paint samples collected from older buildings

Results

- Results are being discussed individually with property owners



Assessment of soil in public spaces was carried out using x-ray fluorescence (XRF) spectrometry testing in the field and taking soil samples.

Testing was carried out at over 200 locations including nature strips and roads within the Tarago town and roadside verges along the route from the mine to the rail corridor.

Results indicate lead in most areas tested falls below relevant thresholds however there are four exceptions:

- In localised spots along the route from the mine to the rail corridor
- Around an old workshop on Mulwaree Street
- South of the station masters cottage within the rail corridor
- On an overland flow path from the rail corridor across Boyd Street.

KEY

- Road
- Hauling route
- Train line
- X-Ray Fluorescence (XRF) sample locations
- Lead reading exceeding 600mg/kg



Assessment of soil in public spaces was carried out using x-ray fluorescence (XRF) spectrometry testing in the field and taking soil samples.

Testing was carried out at over 200 locations including roadside verges along the route from the mine to the rail corridor.

Results indicate lead in most areas tested falls below relevant thresholds however there are localised spots along the route from the mine to the rail corridor above these thresholds.



WOODLAWN
MINE

Tarago ►

COLLECTOR ROAD

BUNGENDORE ROAD

KEY

- Road
- Hauling route
- Train line
- X-Ray Fluorescence (XRF) sample locations
- Lead reading exceeding 1500mg/kg





Test pits have been excavated in the former load out complex with over 60 soil samples collected for analysis.

Groundwater testing has occurred from dedicated monitoring wells.

Lead in groundwater at the school is below drinking water guidelines.

High lead (and other metals) has been observed in surface water discharging from the rail corridor.

There are no impacts observed in the Mulwaree River.

KEY

- Road
- Hauling route
- Train line
- Monitoring wells and groundwater sampling
- Surface water monitoring location
- Test pits

Thresholds

Soil Thresholds

Soil results have been assessed against thresholds for residential, open space and commercial industrial land use as relevant.

These thresholds are sourced from the National Environment Protection Measure (NEPC 2013)

Water Thresholds

Water results have been assessed against thresholds for drinking water, ecology and agriculture.

These thresholds have been sourced from the Australian and New Zealand Water Quality Guidelines (ANZG 2018)

Dust Thresholds

Dust results have been assessed against thresholds sourced from the US EPA *Protect Your Family from Lead in your Home* (2020)

Soil assessment

Soil concentrations

Compared to

National
concentration
guidelines developed
for the receptor group

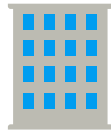
Guidelines recognise that receptors are different. A child playing in soil at home is expected to be more exposed to soil contamination than a factory worker at a concreted site.

The child needs a higher level of protection (a lower guideline concentration). Guidelines are developed for the most sensitive receptor in four main land uses.



**Homes, primary
schools and day care**

Lead Guideline 300mg/kg



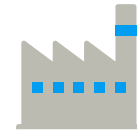
Apartments

Lead Guideline 1200mg/kg



**Parks and open
space, secondary
schools, footpaths**

Lead Guideline 600mg/kg



Commercial and industrial

Lead Guideline 1500mg/kg

Dust assessment

Indoor dust



Indoor dust guidelines
– United States
Environmental Protection
Agency

Indoor dust mostly comes from outdoor soil and dust and paint. Kids playing on the floor ingest more dust than adults.

Babies and young children often put their hands and objects in their mouth which can have lead dust. Ingestion of lead dust is the main route of lead intake into the body



Indoor dust - floor

Lead Guideline 108 $\mu\text{g}/\text{m}^2$



Indoor dust - windowsills

Lead Guideline 1076 $\mu\text{g}/\text{m}^2$



Lead in paint

Lead Guideline <0.1%

Water assessment

Water concentrations

Compared to

National drinking water guidelines developed for everyone

Australian drinking water guidelines assumes that adults drink 2L of water per day for whole of their life and a 2-year old drinks about 1L.

Limited Water ingestion also occurs when using water for washing and watering garden and lawns or while swimming, fishing, boating or simply playing (known as recreational ingestion)



Potable use

Lead Guideline 0.01 mg/L

10 x drinking water guidelines



Recreational use

(swimming, sprinklers etc)

Lead Guideline 0.1 mg/L

Next steps

Immediate

- Wider application of a soil stabiliser in the rail corridor – planned for week starting 6 April
- Finalise sampling and testing of residences and public spaces

Short term

- Monitoring of ground water wells in the rail corridor
- Monitoring of dust
- Developing management plan
- Ongoing consultation with the community and key stakeholders about longer term management plan

Future management plan

- We are working with the NSW Environment Protection Authority (EPA) who has issued a Declaration listing the Tarago rail siding land as significantly contaminated
- The declaration means the EPA will regulate the site to ensure the contamination is investigated and remediated to protect residents, the wider community and the environment
- As part of this declaration, we have commenced developing a Voluntary Management Proposal. This will be finalised with the EPA by 25 May 2020
- Key management measures include:
 - the permanent management of the stockpiled contaminated material that is currently securely covered in sand and cement
 - the permanent management of contaminated soil to ensure ongoing dust suppression and water run-off controls

If you would like more information

P: 02 4907 7525

E: JHRcorres@transport.nsw.gov.au

W: www.transport.nsw.gov.au/tarago

Tarago community information session 9 March 2020

Questions and answers

Project and source of contamination

1. [When did you know there was lead contamination in the rail corridor?](#)

Transport for NSW first received advice that there was lead contamination in the rail corridor in June 2015.

2. [Why wasn't the community told about the contamination in 2015?](#)

The 2015 report was prepared for Transport for NSW to provide advice on the controls for constructing the project. This project didn't proceed in 2015. As a result the community wasn't informed at that time.

3. [Has the Catchment Management Authority been informed about the contamination?](#)

Prior to the community information session Transport for NSW had not informed the local Catchment Management Authority on the presence of lead at the rail yard site.

Please note that the Catchment Management Authority is now a part of the South East Local Land Service. South East Local Land Service has now been informed.

4. [What is the source of the contamination?](#)

The results of investigations to date demonstrate that the primary source of lead in the rail corridor is from the former lead ore loading operations of the Woodlawn Mine.

5. [Are there any health risks associated with the current identified levels of contamination?](#)

Transport for NSW is committed to the protection of the health and well-being of the community.

Initial testing, including at the Tarago Public School, indicated that areas outside of the rail corridor were unlikely to be contaminated with the exception of the Old Station Masters Cottage that is located adjacent to the rail corridor.

Further testing is being carried out on public and private property to comprehensively inform the community about any health risks. The results from this testing will be communicated as they become available.

6. [When will the temporarily stockpiled contaminated material at the rail site be removed?](#)

Transport for NSW is investigating the best way to manage the stockpile of contaminated material that was extracted as part of the rail loop extension project. Options currently include removal from the site to a suitable waste management facility and on site treatment that protects surface and ground water as well as prevents any dust generation.

We are in consultation with the NSW Environment Protection Authority and other relevant experts regarding the preparation of a voluntary management plan for the site which will include the best option for the management of the contaminated material.

7. [How has the lead contamination at the railway site been managed?](#)

Specific controls were put in place when the rail loop extension project construction commenced in 2019.

During the rail loop extension project, best practice lead management practices, consistent with environmental and safety standards were implemented.

The project works were designed to minimise the area and amount of contaminated material that would be disturbed. During work, on-site risk controls including no-go zones, protective equipment for workers, dust control and immediately covering stockpiled waste material to ensure it was secure were implemented.

The stockpile of contaminated material is secured temporarily with a sand and cement cover that prevents any dust or runoff being generated. The old sleepers have been covered with a geotextile to prevent any dust moving off site. Testing for contamination of the sleepers has resulted in them being classified as general solid waste. They will now be removed from site and disposed of at a suitably licenced facility.

We are conducting regular site inspections to ensure the contaminated material is secure.

8. [How will the long-term contamination of the railway corridor be managed?](#)

The NSW Environment Protection Authority (EPA) declared part of the Tarago rail corridor as significantly contaminated on 25 March 2020.

Declaration of the site as significantly contaminated means that the EPA will be ensuring Transport for NSW meet all obligations to fully define the extent of impact and to manage the contamination.

Transport for NSW have agreed with the EPA that the contamination at the site will be assessed, managed and remediated as required under a voluntary management plan.

Relevant experts and an independent auditor are assisting to develop the voluntary management plan. The voluntary management plan will be prepared and provided to the EPA for their approval over the coming weeks.

During this process we will keep the community informed of our plan to manage the site.

9. What was done to reduce dust while work was carried out in the rail yards?

A management plan was developed by experts in contaminated land management before starting work in the railway yard. This plan included steps to manage any dust generated during the work including dust suppression using water trucks, timing of works to minimise the period of contaminated material disturbance and the immediate covering of stockpiled contaminated materials. On completion of the work the stockpile of contaminated soil was covered in a sand and cement layer to stop dust and runoff.

10. Given there were major dust storms during this time, why was watercart spraying considered enough?

The use of watercarts to wet soil during construction work is well recognised in reducing dust. The amount of contaminated material disturbed during the work was kept to a minimum. Contaminated material was stockpiled and immediately covered to stop dust and runoff.

11. What are you doing to manage the risk of dust generated from the Tarago yard on windy and hot days?

The stockpile of contaminated soil has been covered in a sand and cement layer to stop dust and runoff. A soil stabiliser is being trialled on bare / non vegetated areas of the rail yards to bind the soil together to minimise dust. Full application of the soil stabiliser over the site is planned to be completed by 10 April.

We are continuing to conduct regular inspections to confirm the area is secure and to monitor the stockpile.

Community

12. What about lead contamination in the wider Tarago community?

Transport for NSW is committed to the protection of the health and well-being of the community.

Further testing for lead has been carried out since mid-March. Over 300 soil and water samples have been taken at nominated private property and public areas throughout Tarago.

A number of actions have been implemented by Ramboll Group, the environmental specialists carrying out the testing, in response to coronavirus. These include not entering people's homes to take samples. Samples taken from the exterior of properties are still being taken.

All testing results from public areas will be released to the community. The results from testing on private property will only be publicly released on agreement from the owners.

Test results from private property will be communicated directly to the owners of the property, in writing and via telephone.

The public results will be released on the new webpage (www.transport.nsw.gov.au/tarago) which has been set up for the community.

13. How long has the community been exposed to this contamination in the Tarago Railway Yard?

Transport for NSW does not know to what level or when any contamination may have extended beyond the railway corridor. We understand that the lead loading activities associated with the Woodlawn mine ran between the late 1970s and late 1990s. The results of investigations to date demonstrate that the primary source of lead in the rail corridor is from the operation of the ore load out operations.

14. Will there be blood tests offered to people in the Tarago community?

Blood testing for lead levels has been offered to residents of Tarago. If you are a resident of Tarago and would like to have blood testing carried out please contact the project team on 4907 7525 (office hours, Monday to Friday) or email JHRcorres@transport.nsw.gov.au.

15. Will you be remediating our properties? How soon and when will you be doing this?

Further testing is being carried out to determine if lead contamination is present in any other areas in the Tarago township. Should results return positive to contamination Transport for NSW will work directly with affected residents to manage their situation.

16. When will the next community meeting be held?

Transport for NSW will have a further community information session on 7 April 2020.

Given the impact of coronavirus on holding community events this information session will be designed to protect the health and welfare of the community.

If you would like to receive updates or would like to get in touch, please visit our website www.transport.nsw.gov.au/tarago or contact us on 4907 7525 or JHRcorres@transport.nsw.gov.au.

17. Is it safe to use Tarago Train Station?

Testing of the Tarago train station in December 2019, found the levels of lead to be at low and acceptable levels. The station is safe to use.

Tarago Public School

18. Will the people of Tarago be provided with the actual testing report that was done for contamination at the Tarago Public School?

The report has been posted on the project website at www.transport.nsw.gov.au/tarago

19. Will the state government be covering the cost of an independent report to be undertaken of the lead contamination at the Tarago Public School?

The NSW Department of Education has completed its own testing, and these results have been provided to the school community.

20. Why was the school community not told of the possible contamination of the school and the possible risk to students?

The 2015 report was prepared for Transport for NSW to provide advice on the controls for constructing the project. This project didn't proceed in 2015. As a result the community wasn't informed at that time.

21. How many locations, and exactly where in the school grounds, were samples taken from?

Ramboll Group, the environmental experts advising on the project took samples of soil, paint and dust at 25 different locations within Tarago Public School. The locations of these samples can be found on page 56 of Report 10

<https://www.transport.nsw.gov.au/system/files/media/documents/2020/Report-10-Ramboll-2019h-Tarago-Rail-Corridor-Environmental-Data-Gap-Assessment.pdf>. The map is attached as further information.

In summary the testing found the lead levels to be low and acceptable at all locations tested.

22. Why was the water in the tanks located at Tarago Public School not assessed for contamination?

Testing completed by Transport for NSW indicated a low and acceptable level of risk associated with lead contamination in the school. From these results, further testing of the school water tanks was determined to be unnecessary.

The NSW Department of Education has completed its own testing on 5 March 2020, and these results have been provided to the school community.

23. If the water at the school is identified as being contaminated what will the process be?

The NSW Department of Education has distributed a newsletter to all school students advising of controls that have been put in place until the school can resume using its own water supply.

Private property

24. How will the contamination on private property be managed?

Should results indicate contamination Transport for NSW will work directly with affected residents to manage their situation.

25. What is the time-frame for the family to return to their home?

Transport for NSW is supporting the owners of the property while further investigation is being undertaken to understand the sources and scale of the contamination. Once further detailed sampling, testing and remediation options are completed a timeframe can be established.

26. Is the contamination on the private property related to the contamination at the railway site?

Before the property was sold in 1992 the property was part of rail operations and is in close proximity to where the lead ore was loaded at Tarago rail yard. The property has also been painted with lead based paint. This raises the potential for contamination of soils at the site.

Transport for NSW is undertaking further investigations to better understand the sources of contamination at this property.

Community and water contamination

27. Given the wind and movement of sediment, why was the water in tanks not assessed between 2015 and 2019 given the community were all still consuming the water?

The 2015 report was prepared for Transport for NSW to provide advice on the controls for constructing the project. This project didn't proceed in 2015. As a result the community wasn't informed at that time.

28. Should we still be consuming the water in our tanks?

The initial testing data indicates risks to the broader community are low and acceptable. Further testing of rainwater tanks is underway and the results will be communicated when they are available.

29. Is the water table contaminated and should we still be using bore water?

Further testing of groundwater is underway and the results will be communicated when they are available.

30. When are we moving forward with the additional testing of the wider area of Tarago?

Additional testing of private and public lands started on Wednesday 18 March. From Friday 20 March, blood testing arranged by Transport for NSW commenced for those who have registered.

Project justification – rail loop extension

31. There were many objections to the proposed project, at no point was the community informed of what was going on verbally or in writing. Why?

Transport for NSW door knocked the Tarago township in late January 2019 to inform the community of the rail loop extension project. The door knock provided written questions and answers to residences, it was either provided in person or left in the letterbox.

The questions and answers provided advice on the project, why it was being carried out, the options that had been considered and the reason the option we progressed was selected. A copy of the questions and answers is attached as further information.

32. Why was this location assessed as the best solution given the site contamination was known prior to work commencing?

The Tarago option was the most cost effective and provided the most efficient outcome for rail operations. The contamination was assessed as being able to be managed effectively to avoid negative impacts on the community using established contaminated land management techniques.

33. Why was a waste train sitting on the main line for 20 min today (9/03/2020)?

Rail operations will sometimes result in trains stopping on the main line. The project has reduced the need for this to occur.

34. Will we have access to the original business case for the project?

A copy of the Executive summary from the business case as well as the entire options analysis for the Woodlawn siding site at Tarago has been attached as further information.

35. Were other sites investigated as an alternate option for this project?

Yes, three locations were considered.

36. If yes, what were the findings?

The Tarago option was the most cost effective and provided the most efficient outcome for rail operations. Details of the options can be found in the options report which is attached as further information.